GENERAL INDEX[1]

A

Absorption of mineral elements, 395
of oxygen by roots when shoot is in darkness or in light, 673
Accommodations at Madison, 345
Acidity, titratable, 463
Activity, catalase, in tomato fruits, 155
ADDOMS, RUTH M., Further notes on the nutrient requirements and the histology of the cranberry, with special reference to the sources of nitrogen, 643
Aeration, 625
Age and composition of rhubarb, 447
Agricultural biochemistry, R. A. DUTCHER and D. E. HALEY, 346
ALEXANDER JEROME, Colloid chemistry, 181
Alfalfa, hardiness of estimated, measurement of electrical conductivity, 63
Algae, isolation in pure culture, technique, 533
mass cultures, suggestions for growing, 539
Ammonia nitrogen, methods for determination, 685
Analysis, plant, handbook of, G. KLEIN, 562
methods, A. O. A. C., 562
Anatomy, phloem, in cucurbits, 183
ANDERSON, D. B., A simple dilatometer, 175
Anniversary, SACHS, 179
Annual election, 559
Anthokinetics, G. W. GOLDSMITH and A. L. HAFENRICHTER, 753
APPLEMAN, C. O., life membership award, 344
Areas of strawberry leaf, methods of measuring, 745
Ash, 421
Assistance, editorial, 343
Atlantic City Meeting, 749
Available water and wilting of plants, 35
Award, life membership, 344

B

Bartlett pear shoots, changes in composition of insoluble nitrogen fraction, 323
changes in composition of non-protein nitrogen, 107
Base exchange reactions, chemical equivalent, 119
Behavior of roots, container for studying, 173
Bibliography of low temperature relations, 180
Biochemistry, agricultural, R. A. DUTCHER and D. E. HALEY, 346
BISSON, C. S., Changes in composition of pea after harvest, 273
Changes accompanying fruit development in pea, 91
Boron, effect on growth of lettuce, 161
Botanical Congress, International, 559
Bound-water studies, 378
Bulbs of narcissus, effect of hot-water treatment on carbohydrate changes, 145
BURKE, EDMUND, Chlorosis of trees, 329
BURRELL, R. C., Introduction to phytochemical research, 562

C

Cabbage, bound-water, 378
CALDWELL, J. S., Relation of age and seasonal conditions to composition of rhubarb, 447
CALFEE, R. K., Manganese essential for the growth of *Lemna major*, 697
Effect of boron on growth of lettuce, 161
Callusing and rooting of cotton stem cuttings, 733
CANNON, W. A., Absorption of oxygen by roots when the shoot is in darkness or in light, 673

[1] Papers published in PLANT PHYSIOLOGY are indexed in the *Agricultural Index*, The H. W. Wilson Co., New York City.

Caoutchouc in guayule, 131
Carbohydrate changes in narcissus bulbs, effect of hot-water treatment, 145
content of tomato fruit, 705
-nitrogen relation, 417
Carbon-dioxide production during growth of yeast, 139
Catalase activity in tomato fruits, 155
Changes, accompanying fruit development in the pea, 91
in composition of insoluble nitrogen fraction in pear shoots, 323
in composition of non-protein nitrogen in pear shoots, 107
in composition of pea after harvest, 273
Chemical agents, action on stomatal movements, 495
equivalent base exchange reactions in plants, 119
methods, 346
Chlorosis, of trees, 329
Chlorotic leaves, and green and yellow pigments, 711
pear trees, H-ion concentration and iron content of sap, 253
CLARK, INEZ, Catalase activity in tomato fruits, 155
CLEMENTS, H. F., Mannose and first sugar of photosynthesis, 547
Clover, distribution of iron, 244
influence of potassium nitrate on nodule formation and nitrogen fixation, 597
COLBERT, J. C., Shorter course in organic chemistry, 182
Colloid chemistry, JEROME ALEXANDER, 181
Committee, life membership, 752
STEPHEN HALES prize, 752
program, 346
Composition, non-protein nitrogen, in pear shoots, 107
of branch growth and vegetative responses, 391
of corn tissue, determined by expressed sap, 261
of pea after harvest, changes, 273
of rhubarb and seasonal conditions, 447
seasonal changes, of insoluble nitrogen fraction in pear shoots, 323
Concentration, hydrogen-ion of soils, and growth of pasture plants, 527
hydrogen-ion, tracheal sap of pear trees, 253
of nutrient solution and growth of tree seedlings, 742
Conditions, seasonal, and composition of rhubarb, 447
Conductivity, electrical, and hardiness of plants, 63
Congress, International Botanical, 559
Consumption of oxygen during growth of yeast, 139
Container for study of root behavior, 173
Content, carbohydrate, of tomato fruit, 705
COOPER, H. P., Relation of H-ion concentration of soils and pasture plant growth, 527
Corms, gladiolus, flower production, 309
Corn, inorganic nitrogen, determined by expressed sap method, 517
tissue, composition determined by expressed sap, 261
tissue, determination of glucose and fructose, 47
Cortex, electric polarities and temperature, 505
Cotton stem cuttings, callusing and rooting, 733
CRAFTS, A. S., Dual-purpose microscope lamp, 553
Phloem anatomy, exudation, and transport of organic nutrients in cucurbits, 183
Cranberry, nutrient requirements and histology, 643
Cucurbits, phloem anatomy, exudation, and transport of organic nutrients, 183
CULPEPPER, C. W., Relation of age and seasonal conditions to composition of rubarb, 447
Culture solution, reaction and pine seedlings, 657
Cultures of algae, suggestions for growing, 539

of green algae, isolation by simple technique, 533
Cuttings of cotton stem, callusing and rooting, 733
Cysteine, 568
Cystine, 568
Cytology, introduction to, ROBERT JARETZKY translation of L. W. SHARP, 182

D

Darkness, and absorption of oxygen by roots, 673
DARROW, GEORGE M., Methods of measuring strawberry leaf areas, 745
Death of members, 559
Deficiency, sulphur, and metabolism in tomato, 565
Determination of starch in plant tissues, 541
of ammonia nitrogen, 685
Developmental stages, catalase activity in tomato fruits, 155
Development as influenced by fruit and seed formation, 79
of fruit of pea, changes accompanying, 91
DEXTER, S. T., Hardiness estimated by measurement of electrical conductivity, 63
Studies of hardiness of plants: a modification of the Newton pressure method for small samples, 721
Dilatometer, a simple, 175
Disease and injury of plants in relation to environmental factors, 752
leaf roll, 753
Distribution of iron in plants, 227
DONEEN, L. D., A micro-method for nitrogen in plant material, 717
Douglas fir, temperature and electric polarities, 505
temperature control of flux equilibrium of electro-chemical processes and electric polarity, 297
DUTCHER, R. A., Agricultural biochemistry, 346

E

Editorial assistance, 343
Effects of sulphur deficiency on metabolism in tomato, 565
Election, annual, 559
Electrical conductivity, measurement, to test hardiness of plants, 63
Electric polarities in Douglas fir and temperature, 505
polarity in Douglas fir, temperature control of flux equilibrium, 297
Electrochemical processes in Douglas fir, temperature control of flux equilibrium, 297
EMMERT, E. M., Field method for estimating nitrate, phosphate, and potassium in plants, 315
Endowment, 560
Environment and physico-chemical properties of saps, 349
Environmental conditions and growth of excised root tips of wheat seedlings in liquid media, 613
factors in relation to plant disease and injury, bibliography, J. D. WILSON, 752
Equilibrium, flux, electro-chemical processes and electric polarity in Douglas fir, control by temperature, 297
Errata, 752
ESMARCH, F., Leaf roll disease, 753
Excretions, toxicity of root, 339
Exudation of cucurbits, 183

F

Factors affecting distribution of iron in plants, 227
environmental, in relation to plant disease and injury, 752
Fats, L. UBBELOHDE, edited by HANS HELLER, 563
Fir, electric polarities and temperature, 505
temperature control of flux equilibrium of electro-chemical processes and electric polarity, 297
Flower production from gladiolus corms, 309
Flux equilibrium of electro-chemical processes and electric polarity in Douglas fir, control by temperature, 297

Fructose, determination of in corn tissues, 47
Fruit development in pea, changes accompanying, 91
tomato, carbohydrate content, 705
formation, influence on growth and development, 79
Fruits of tomato, catalase activity, 155
Function of caoutchouc in guayule, 131
Fungi, rôle in "nutrilites" in nutrition, 629

G

GERDEL, R. W., Inorganic nitrogen in corn determined by expressed sap method, 517
GILBERT, B. E., Flower production from gladiolus corms harvested at different stages of ripening, 309
Gladiolus corms, flower production, 309
Glucose, in apple tissues, 412
determination of, in corn tissues, 47
Glutathione, 568
GOLDSMITH, G. W., Anthokinetics, 753
GOURLEY, J. H., Response of iris to soil reaction, 739
GRABER, L. F., Hardiness estimated by measurement of electrical conductivity, 63
Grasses, wilting of in relation to water-supplying power of soil, 1
GREATHOUSE, G. A., Effects of environment on physico-chemical sap properties and their relation to leaf temperature, 349
Green and yellow pigments in chlorotic leaves, 711
Growth and H-ion concentration, 619
Growth and soil conditions, 563
as influenced by fruit and seed formation, 79
composition of branch, and reproductive responses, 391
instrument for measuring, 556
of excised root tips of wheat seedlings in liquid media, 613
of *Lemna major*, manganese essential, 697
of lettuce, effect of boron, 161
of tree seedlings in relation to light intensity and concentration of nutrient solution, 742
of yeast, oxygen consumption and carbon-dioxide production, 139
pasture plants, relation of H-ion concentration, 527
Guayule, occurrence of caoutchouc, 131
GUNDERSON, M. F., Growing mass cultures of algae for vitamin study, 539
GUSTAFSON, F. G., Catalase activity in tomato fruits, 155

H

HAASIS, F. W., Seasonal shrinkage of Monterey pine and redwood trees, 285
HAFENRICHTER, A. L., Anthokinetics, 753
HALES, STEPHEN, prize, 344, 752
HALEY, D. E., Agricultural biochemistry, 346
Handbook, of plant analysis, G. KLEIN, 562
Hardiness, estimated by measurement of electrical conductivity, 63
of plants, 721
HARVEY, R. B., Bibliography of low temperature relations, 180
HASSELBRING, H., Effect of hot-water treatment on carbohydrate changes in narcissus bulbs during storage, 145
HAYNES, FLORENCE W., Oxygen consumption and carbon-dioxide production during growth of yeast, 139
Height growth, instrument for measuring, 556
HELLER, HANS, Oils and fats, L. UBBELOHDE, 563
Hemicellulose, 415
Histology of cranberry, and nutrient requirements, 643
HONN, J. MARSHALL, Rôle of "nutrilites" in the nutrition of molds and other fungi, 629
HOPKINS, E. W., Influence of potassium nitrate on nodule formation and nitrogen fixation by clover, 597
Hot-water treatment, effect of carbohydrate changes in narcissus bulbs during storage, 145
HOWELL, JOSEPH, JR., Relation of west-

ern yellow pine seedlings to the reaction of the culture solution, 657
Hydrogen-ion concentration, 232
and growth of iris, 739
of soils and growth of pasture plants, 527
of tracheal sap, 253

I

Incorporation, 339, 750
Injury of plants in relation to environmental factors, bibliography, J. D. WILSON, 752
Instrument for measuring height growth, 556
Intensity of light and growth of tree seedlings, 742
International Botanical Congress, 559
Ion effect, 122
Iris, response to soil reaction, 739
Iron content of tracheal sap of pear trees, 253
distribution in plants, 227
Isolation of green algae in pure culture, technique, 533

J

JANSSEN, GEORGE, death of, 559
JARETZKY, ROBERT, Translation of SHARP'S Introduction to cytology, 182
JONES, H. A., Changes accompanying fruit development in pea, 91
Changes in composition of pea after harvest, 273
Juice, plant, and methods for determination of ammonia nitrogen, 685

K

KIENHOLZ, R., Instrument for measuring height growth, 556
KLEIN, G., Handbook of plant analysis, 562
KNOTT, J. E., Rapidity of response of spinach to change in photoperiod, 125
KOSTYTCHEV, SIERGEI PAVLOVITCH, biographical sketch by S. A. WAKSMAN, 335
KOSTYTSCHEW, S., Plant physiology, 180
KÜSTER, ERNST, Zonation, 181

L

Lamp, microscope, 553
sun, plant test, 551
Leaf areas of strawberry, methods of measuring, 745
blade, composition of rhubarb, and age, 447
roll disease, F. ESMARCH, 753
temperature and physico-chemical properties of saps, 349
Leaves, green and yellow pigments in chlorotic, 711
Lemna major, manganese essential for growth, 697
Lettuce growth, effect of boron, 161
Lever, optical, as tool in physiological studies, 727
Life membership award, 344
membership committee, 752
Light, and absorption of oxygen by roots, 673
Light, effects, 488
intensity and growth of tree seedlings, 742
mechanism of action, on stomatal movement, 481
LIVINGSTON, B. E., Wilting and withering of grasses as related to water-supplying power of soil, 1
LLOYD, F. E., Occurrence of caoutchouc in guayule and its function, 131
Longitudinal electric polarities and temperature in Douglas fir, 505
LUND, E. J., Control of flux equilibrium of electro-chemical processes and electric polarity in Douglas fir, 297
Temperature effects on electric polarities in Douglas fir, 505

M

Madison, accommodations, 345
Manganese essential for growth of *Lemna major*, 697
Mannose and first sugar of photosynthesis, 547
MCGEORGE, W. T., Chemical equivalent base exchange reactions in plants, 119

McHargue, J. S., Manganese essential for growth of *Lemna major*, 697
Effect of boron on growth of lettuce, 161
Measuring strawberry leaf areas, 745
Mechanism for movement of organic materials in plants, 165
of action of light on stomatal movement, 481
Meeting, A. A. A. S., summer, 345, 749
Atlantic City, 749
Madison, 345
New Orleans, 179, 343
summer, 179, 344
Syracuse, 749
Medal, Osborne, 559
Membership, 179
life, award, 344
life, committee, 752
Metabolism in tomato, effects of sulphur deficiency, 565
Methods, chemical, 346
expressed sap, and inorganic nitrogen, 517
for determination of ammonia nitrogen, 685
for estimating nitrate, phosphate, and potassium in plants, 315
iodometric determination of glucose, 48
-micro, for nitrogen in plant material, 717
Nyn's determination of fructose, 49
of analysis, A. O. A. C., 562
of determining glucose and fructose in corn tissues, 47
of measuring strawberry leaf areas, 745
polarization, determination of sugars, 51
Microbiology, principles of soil, S. A. Waksman, 347
Microscope lamp, 553
Milo, bound-water, 273
Minnesota section, 561
Moinat, A. D., Available water and wilting of plants, 35
Molds, rôle of "nutrilites" in nutrition, 629
Monterey pine, seasonal shrinkage, 285
Morris, V. H., Determination of glucose and fructose in corn tissues, 47
Use of expressed sap in determining composition of corn tissue, 261
Mounce, F. C., Further notes on the nutrient requirements and the histology of the cranberry, with special reference to the sources of nitrogen, 643
Movement of organic materials in plants, 165
stomatal, and mechanism of action of light, 481
Mulay, A. S., Changes in composition of insoluble nitrogen fraction in pear shoots, 323
Seasonal changes in composition of non-protein nitrogen in pear shoots, 107
Murneek, A. E., Growth and development as influenced by fruit and seed formation, 79

N

Narcissus bulbs, carbohydrate changes during storage, 145
New Orleans meeting, 179, 343
Nightingale, G. T., Effects of sulphur deficiency on metabolism in tomato, 565
Nitrate, method for estimation in plants, 315
potassium, and nodule formation by clover, 597
Nitrogen, ammonia, methods for determination, 685
carbohydrate, 417
changes in composition of insoluble fraction, in pear shoots, 323
fixation by clover, influence of potassium nitrate, 597
inorganic, determined by expressed sap method, 517
in plant material, micro-method, 717
non-protein, in pear shoots, 107
sources, and nutrient requirements and histology of cranberry, 643
Nodule formation by clover, influence of potassium nitrate, 597

Non-protein nitrogen in pear shoots, changes in composition, 107
Nutrient requirements and histology of cranberry, 643
solution concentration and growth of tree seedlings, 742
Nutrients, transport of organic in cucurbits, 183
"Nutrilites" in nutrition of molds and other fungi, 629
Nutrition of molds and rôle of "nutrilites," 629

O

Obit. GEORGE JANSSEN, 559
Occurrence of caoutchouc in guayule, 131
Office, secretarial, 344
Oils, L. UBBELOHDE, edited by HANS HELLER, 563
Organic chemistry, J. C. COLBERT, 182
materials, in plants, movement of, 165
OSBORNE medal, 559
OSERKOWSKY, J., H-ion concentration and iron content of sap of pear trees, 253
Relation between the green and the yellow pigments in chlorotic leaves, 711
Osmotic pressure of plant saps, 361
Oxalis, distribution of iron, 233
Oxygen, absorption by roots when shoot is in darkness or in light, 673
consumption during growth of yeast, 139

P

Parthenium argentatum, occurrence and function of caoutchouc, 131
Pasture plant growth and H-ion concentration of soils, 527
Pea after harvest, changes in composition, 273
changes accompanying fruit development in, 91
Pear changes in composition of non-protein nitrogen, 107
shoots, changes in composition of insoluble fraction, 323
trees, H-ion concentration and iron content of sap, 253
PEIRCE, G. J., Plant physiology, 181
PEMBER, F. R., Flower production from gladiolus corms harvested at different stages of ripening, 309
PETERSON, W. H., Influence of potassium nitrate on nodule formation and nitrogen fixation by clover, 597
Petiole, composition of rhubarb, and age, 447
Phloem anatomy in cucurbits, 183
Phosphate, method for estimation in plants, 315
Phosphorus, 425
Photoperiod change, effect on spinach, 125
Photoperiodic and temperature responses in radish, 337
Photosynthesis, mannose and first sugar, 547
Physiology, plant, G. J. PEIRCE, 181
S. KOSTYTSCHEW and F. A. F. C. WENT, 180
Phytochemical research, introduction to, 562
Pigments, green and yellow, in chlorotic leaves, 711
Pine, Monterey, seasonal shrinkage, 285
Pine seedlings and reaction to culture solution, 657
Plant analysis, handbook, G. KLEIN, 562
disease and injury in relation to environmental factors, bibliography, J. D. WILSON, 752
growth and soil conditions, SIR JOHN RUSSELL, 563
material, micro-method for nitrogen, 717
physiology, 751
physiology, S. KOSTYTSCHEW and F. A. F. C. WENT, 180, G. J. PEIRCE, 181
test of sun-lamp, 551
tissues, determination of starch, 541
Plants, chemical equivalent base exchange reactions, 119
distribution of iron, 227
field method for estimating nitrate, phosphate, and potassium, 315
growth of pasture, and H-ion concentration of soils, 527

hardiness, a modification of the Newton pressure method for small samples, 721
movement of organic materials in, 165
PLITT, THORA M., Photoperiodic and temperature responses of radish, 337
Polarities, electric, in Douglas fir, temperature relations, 505
Polarity, electric, in Douglas fir, temperature control of flux equilibrium, 297
Polysaccharides in peas, 276
Portraits, 345
SACHS, opposite p. 1, and opposite p. 565
Potassium, 421
method for estimation in plants, 315
nitrate, influence on nodule formation by clover, 597
Potato, distribution of iron, 235
Pressure, modification of Newton method for small samples, 721
osmotic, of plant saps, 361
PRIESTLEY, J. H., Movement of organic materials in plants: a note on a recently suggested mechanism, 165
Principles of soil microbiology, S. A. WAKSMAN, 347
Prize, STEPHEN HALES, 344, 752
Processes, electro-chemical in Douglas fir, temperature control of flux equilibrium, 297
Production of carbon dioxide during growth of yeast, 139
of flowers from gladiolus corms, 309
Program committee, 346
Properties, physico-chemical of saps, and environment, 349
Proteolysis, 583
Purdue University section, 561
Pyrus malus, composition of branch growth and reproductive responses, 391

R

Radial electric polarities in Douglas fir, and temperature, 505
Radish, photoperiodic and temperature responses, 337
Reaction, of culture solution, and pine seedlings, 657
of soil and response of iris, 739
Reactions, equivalent chemical, base exchange, 119
REA, H. E., Callusing and rooting of cotton stem cuttings, 733
Redwood, seasonal shrinkage, 285
Relation of environmental factors to plant disease and injury, bibliography, J. D. WILSON, 752
Report, Treasurer's, 751
Requirements, nutrient, and histology of cranberry, 643
Research, introduction to phytochemical, R. C. BURRELL, 562
Response of spinach to change in photoperiod, 125
of iris to soil reaction, 739
Responses, reproductive, and composition of branch growth, 391
temperature, of radish, 337
Rhubarb, composition, and seasonal conditions, 447
RICHARDS, O. W., Oxygen consumption and carbon dioxide production during growth of yeast, 139
Ripening, different stages of, flower production from gladiolus corms, 309
ROBBINS, W. R., Effects of sulphur deficiency on metabolism in tomato, 565
ROBERTSON, D. P., Carbohydrate content of tomato fruit, 705
ROGERS, C. H., Factors affecting distribution of iron in plants, 227
Roll disease, leaf, F. ESMARCH, 753
Root behavior, container for studying, 173
composition of rhubarb, and age, 447
excretions, 339
tips of wheat seedlings in liquid media, 613
Rooting of cotton stem cuttings, 733
Roots, absorption of oxygen when shoot is in darkness or in light, 673
Rumex, distribution of iron, 233
RUSSELL, SIR JOHN, Soil conditions and plant growth, 563

S

SACHS anniversary, 179; JULIUS VON, 750
portraits, opposite p. 1; opposite p. 565
Samples, modification of Newton pressure method for small, 721
Sap from pear trees, H-ion concentration and iron content, 253
method, expressed, and inorganic nitrogen, 517
use of expressed, and determination composition of corn tissue, 261
Saps, psycho-chemical properties and leaf temperature, 349
SAYRE, J. D., Use of expressed sap in determining composition of corn tissue, 261
SAYWELL, L. G., Carbohydrate content of tomato fruit, 705
SCARTH, G. W., Mechanism of action of light on stomatal movement, 481
SCHERMERHORN, L. G., Effects of sulphur deficiency on metabolism in tomato, 565
SCHLENKER, F. S., Comparison of existing methods for determination of ammonia nitrogen and their adaptability to plant juice, 685
Seasonal changes in composition of insoluble nitrogen fraction in pear shoots, 323
changes, nitrogen, in Bartlett pear shoots, 107
conditions and composition of rhubarb, 447
shrinkage of pine and redwood, 285
Secretarial office, 344
Section, Purdue University, 561; Minnesota, 561
Seed formation, influence on growth and development, 79
Seedlings, of trees, growth in relation to light intensity, 742
pine, and reaction to culture solution, 657
SHARP, L. W., Introduction to cytology, ROBERT JARETZKY translation, 182
SHAW, D. A., Catalase activity in tomato fruits, 155
SHIVE, J. W., Factors affecting distribution of iron in plants, 227
Shoot, in darkness or in light, and absorption of oxygen by roots, 673
Shoots of Bartlett pear, changes in composition of insoluble fraction, 323
SHRINER, R. L., Determination of starch in plant tissues, 541
Shrinkage, seasonal, of pine and redwood, 285
SHULL, C. A., Toxicity of root excretions, 339
SIDERIS, C. P., Container for studying root behavior, 173
SKINNER, C. E., Growing mass cultures of algae for vitamin study, 539
Isolation in pure culture of green algae from soil, 533
Soil conditions and plant growth, SIR JOHN RUSSELL, 563
isolation of algae from, by simple technique, 533
microbiology, principles, S. A. WAKSMAN, 347
moisture and osmotic pressure, 375
reaction, response of iris, 739
solution and salts, 393
water-supplying power, in relation to wilting, 1
Soils, hydrogen-ion concentration and plant growth, 527
Solution, concentration of nutrient and growth of tree seedlings, 742
culture, reaction, and pine seedlings, 657
Soy bean, distribution of iron, 235
varietal differences, 376
Spinach, response to change in photoperiod, 125
Starch, 413
in plant tissues, 541
STEINBAUER, G. P., Growth of tree seedlings in relation to light intensity, 742
Stem cuttings of cotton, callusing and rooting, 733
STEWARD, F. C., Movement of organic materials in plants: a note on a recently suggested mechanism, 165

Stomatal movement, mechanism of action of light, 481
Storage of narcissus bulbs and carbohydrate changes, 145
Strawberry leaf areas, methods of measuring, 745
Sucrose, 412
Sugar in peas, 275
of photosynthesis, mannose, 547
Sulphates, 568
Sulphites, 568
Sulphur deficiency and metabolism in tomato, 565
Summer meeting, A. A. A. S., 345
meeting, 179, 344, 749
Syracuse meeting, 749

T

Tannin, 463
Temperature control of flux equilibrium of electro-chemical processes and electric polarity in Douglas fir, 297
effects, 486, 501
effects on electric polarities in Douglas fir, 505
of leaf and physico-chemical properties of saps, 349
relations, low, bibliography of, 180
responses in radish, 337
THOMAS, WALTER, Composition of branch growth in relation to vegetative and reproductive response in *Pyrus malus*, 391
Tissues of plant, determination of starch, 541
Tomato, carbohydrate content of fruit, 705
effects of sulphur deficiency on metabolism, 565
fruits, catalase activity in, 155
Tool in physiological studies, optical lever, 727
TOTTINGHAM, W. E., Hardiness estimated by measurement of electrical conductivity, 63
Plant test of sun lamp, 551
Toxicity of root excretions, 339
Translocation in cucurbits, 183
Transport of organic nutrients in cucurbits, 183
Treasurer's report, 751
Tree seedlings, growth in relation to light intensity, 742
Trees, chlorosis of, 329
Turgor, leaf, 487, 501

U

UBBELOHDE, L., Oils and fats, edited by HANS HELLER, 563
University, Purdue, section, 561

V

Vitamin study, mass cultures of algae, 539

W

WADSWORTH, H. A., Optical lever as tool in physiological studies, 727
WAKSMAN, S. A., Biographical sketch of SIERGEI PAVLOVITCH KOSTYTCHEV, 335
Principles of soil microbiology, 347
WARWEG, EDNA, Catalase activity in tomato fruits, 155
Water, and wilting of plants, 35
relations, 426
-supplying power of soil, relation to wilting, 1
WENT, F. A. F. C., Plant physiology, 180
WESP, E. F., Determination of glucose and fructose in corn tissues, 47
Wheat seedlings in liquid media, 613
WHITE, P. R., Influence of some environmental conditions on growth of excised root tips of wheat seedlings in liquid media, 613
WILLIAMS, C. F., A simple dilatometer, 175
WILLIAMS, R. J., Rôle of "nutrilites" in nutrition of molds and other fungi, 629
WILSON, J. D., Wilting and withering of grasses as related to water-supplying power of soil, 1
Environmental factors in relation to plant disease and injury, bibliography, 752
WILSON, P. W., Influence of potassium nitrate on nodule formation and nitrogen fixation by clover, 597

Wilting of grasses as related to water-supplying power of soil, 1
of plants, and water supply, 35
periodic, and osmotic pressure, 372
Withering of grasses as related to water-supplying power of soil, 1
Wood, electric polarities and temperature, 505
Wounding, effects, 502
Wound stimulus, 483

Y

Yeast, growth of in relation to oxygen consumption and carbon dioxide production, 139
Yellow and green pigments in chlorotic leaves, 711

Z

Zonation, ERNST KÜSTER, 181